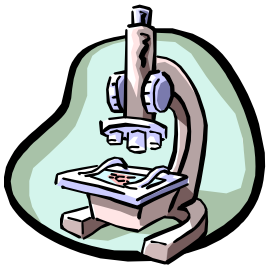
ACADEMIC REVIEW

Department of Surgery
USU



Stanley L. Minken, MD, Editor

Vol. 1 No. 2 Date 10/01/02

Editors Notebook

The academic year is now in full swing. The new students have begun the basic science years with great enthusiasm. Of particular interest to the Surgery Department is the inclusion of a number of surgeons into the Anatomy dissection program. Dr. Al Seyfer, Professor of Anatomy and Surgery, has initiated an excellent dissection schedule that incorporates the expertise of the surgical staff into this important basic science subject. Besides giving a somewhat clinical slant to the cadaver work, the inclusion of surgeons into the teaching mix exposes the students to Surgery as a discipline during a very early period in their development. With the reduced overall interest in Surgery as a specialty, perhaps this type of approach will kindle new interest in the medical student group.

The surgical curriculum continues to be reviewed to effect positive changes. The students have enthusiastically enjoyed the preceptor program. Presently, we are conducting an analysis of the general surgery and specialty mix as well as the possibility of offering more specialty choices in the 3rd year.

One correction is in order regarding the passing grade on the final (shelf) exam. Last month I stated that the 20th percentile was the threshold. While that is the goal, during the current academic year the 10th percentile is the threshold.

==========

Words from the Chairman

As the 25th Anniversary program approaches for the USU Dept. of Surgery, activities remain hectic and pleasant in a positive direction. It will be good to reflect on our history, which is now our heritage. We now look forward to the next 25 years and try to envision how we can improve our combined efforts to support the USUHS mission.

Drs. Alam, Koustova and Rhee are to be congratulated for their success in securing two research grants, one a highly competitive NIH award. Our prostate and breast centers continue to be very competitive for SPORE grants under Dr. Moul, Srivastava, and Shriver.

As of 1 Nov. 2002 Dr. Ishaiahu Shecter, former chairman of biochemistry, will join the Dept. of Surgery research faculty.

Dr. David Burris has been appointed by Dean Laughlin to serve as interim Department of Surgery Chairman. We anticipate a smooth transition and look forward to continuing our collegial and enthusiastic efforts together. I would like to thank everyone who has contributed to our efforts.

==========

DEPARTMENT NEWS

Dr. John Hutton has been newly appointed to the promotions committee.

Ms. Sherry Osborne, long time Department of Surgery administrator has retired and will assume a part time role as of September 2002.

A hands-on breast ultrasound workshop will be presented on November 4th & 5th, 2002 the program is under the direction of Dr. David Wherry.

The Department continues to plan for the upcoming 25th anniversary celebration. Outstanding scientific and social programs are planned to highlight this historic occasion. Recent Department sponsored events included the basic ATLS and instructor ATLS courses.

For Updated University Continuing Education info, please check the USUHS Web Page link as follows:

http://www.usuhs.mil/che/schedule.htm

==========

GUEST EDITOR

Mark Bowyer, M.D. COL (sel) USAF, MC, Chief, Division of Trauma and Combat Surgery, USUHS

RESEARCH UPDATE: VALIDATION OF SURGICAL SIMULATION

Pneumothorax associated with chest injury is one of the major life-threatening (and potentially salvageable) injuries encountered in military conflict. Placement of a chest tube in such circumstances is life-saving and it is imperative that all military health providers be facile with this procedure. As opportunities to practice this skill on humans is limited, achieving and maintaining competence can be difficult. Animals can be used for training, but present several problems. The medical industry is just now beginning to explore the use of simulators for training. One such simulator designed for chest tube insertion is VIRGIL. VIRGIL combines a sophisticated mannequin that contains flesh-like tissue, bone-like ribs, and pockets of blood-like liquid with a computer that record all movements made with the device inside and outside of the chest cavity (See Figure). Based on these recorded movements, it is then possible to calculate factors that can impact the success of the procedure.

To gain acceptance, medical simulators need to undergo rigorous validation studies. The Department of Surgery at USUHS, under the direction of COL (sel) Mark W. Bowyer - Chief, Division of Trauma and Combat Surgery, and Assistant Dean for Simulation Education has recently received funding from the Army (Telemedicine and Advanced Technologies for Combat Casualty Care) to conduct validation studies of VIRGIL. The long term goal of this project is to conduct studies that show the validity of this simulator for teaching and maintaining chest tube insertion skills. This will be accomplished in a multi-phase fashion. Phase one, which is underway, will compare VIRGIL with the "gold standard" pig model for teaching third year medical students how to insert a chest tube.

To date twenty, third year medical students (novices) and five Senior Surgeons (experts) have participated in this study. The students were given a basic written test of chest tube knowledge. The students were then divided into two groups of ten. Group 1 students were taught to insert a chest tube into a pig with appropriate correction as needed. Group 2 students were taught to insert a chest tube into VIRGIL with appropriate correction as needed. Both groups were then "tested", by placing two chest tubes on VIRGIL without any coaching or correction. As a final evaluation both groups placed a chest tube in a pig, as they would normally do on the final day of their Introduction to Surgery Course. Instead of being taught by the faculty, the students were silently evaluated by the faculty who were blinded to their initial method of learning. The students were then given a written test of chest tube knowledge.

The results of this study to date revealed a significant increase in knowledge and the level of confidence of third year medical students to insert a chest tube. There were no faculty rated differences between the groups in terms of understanding of equipment, landmarks, indications, or complications; and the technique and overall performance did not differ between the groups. Of particular note the faculty were asked if they felt comfortable that the student could insert a chest tube on a human if asked to do so tomorrow, and the response was yes for 75 % of the students after limited training. Another interesting finding was that the time required to insert a chest tube into VIRGIL decreased significantly with practice and did not differ significantly from experts by the third attempt. In summary in this limited study, VIRGIL was at least equivalent to the pig for training medical students to insert a chest tube. The implications are that simulators may well replace or limit the use animal models for the teaching of certain life-saving procedures.